

## **Amendments to the Claims:**

This following listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

Claim 1 (previously presented): A method for monitoring performance of an optical communication link, said method comprising:

at a first intermediate location along said link, tapping a portion of an optical data signal traveling along said link to form a first measurement optical signal;

amplifying said first measurement optical signal;

detecting said first measurement optical signal to form a first measurement electrical signal; and

performing error correction decoding on said first measurement electrical signal to generate an indication of correct receipt of data at said first intermediate location based on a number of detected errors in the data.

Claim 2 (previously presented): The method of claim 1 further comprising:

using said indication of correct receipt of data at said first intermediate location to determine a fault along said link prior to said first intermediate location.

Claim 3 (previously presented): The method of claim 1 wherein said optical data signal comprises a WDM signal and tapping comprises:

isolating a portion of a particular wavelength component of said optical data signal.

Claim 4 (previously presented): The method of claim 1 further comprising:

at a second intermediate location along said link, tapping a portion of said optical data signal traveling along said link to form a second measurement optical signal;

amplifying said second measurement optical signal;

detecting said second measurement optical signal to form a second measurement electrical signal; and

performing error correction decoding on said second measurement electrical signal to generate an indication of correct receipt of data at said second intermediate location.

Claim 5 (original): The method of claim 4 further comprising:

using said indications of correct receipt of data at said first intermediate location and at said second intermediate location to locate a fault along said link prior to said second intermediate location.

Claim 6 (previously presented): Apparatus for monitoring performance of an optical communication link at an intermediate location along said link, said apparatus comprising:

a coupler that taps a portion of an optical data signal traveling along said link;  
an optical amplifier that boosts said portion of said optical data signal;  
an optical receiver that recovers data based on said portion of said optical data signal;  
an error correction decoding circuit that identifies a number of detected errors in receipt of said data; and

a link verification stage that generates an indication of link operation based on errors identified by said error correction decoding circuit.

Claim 7 (previously presented): The apparatus of claim 6 further comprising:

a filter that isolates a particular wavelength component of said portion of said optical data signal for input to said optical receiver.

Claim 8 (canceled).

Claim 9 (original): The apparatus of claim 7 wherein said filter comprises a tunable filter.

Claim 10 (original): The apparatus of claim 9 wherein said link verification stage tunes said tunable filter to test a selected wavelength component.

Claim 11 (previously presented): The apparatus of claim 6 wherein said optical receiver comprises:

- a photodetector circuit that generates an electrical signal based on said portion of said optical data signal;

- a demodulator that recovers data from said electrical signal.

Claim 12 (previously presented): A system for locating a fault along an optical communication link, said system comprising:

- a first link monitor that monitors performance of said link at a first intermediate location along said link; and

- a second link monitor that monitors performance of said link at a second intermediate location along said link; and

- wherein each of said first link monitor and said second link monitor comprise:

  - a coupler that taps a portion of an optical data signal traveling along said link;

  - an optical amplifier that boosts said portion of said optical data signal;

  - an optical receiver that recovers data based on said portion of said optical data signal;

  - an error correction decoding circuit that identifies errors in receipt of said data;

- and

- a link verification stage that generates an indication of link operation based on a number of errors detected by said error correction decoding circuit.

Claim 13 (original): The system of claim 12 wherein a fault is located based on said indications of link operation from said first link monitor and said second link monitor.

Claim 14 (previously presented): The system of claim 12 wherein each of said first link monitor and said second link monitor further comprise:

- a filter that isolates a particular wavelength component of said portion of said optical data signal for input to said optical receiver.

Claim 15 (original): The system of claim 14 wherein said filter comprises a tunable filter.

Claim 16 (previously presented): The system of claim 12 wherein said optical receiver comprises:

- a photodetector circuit that generates an electrical signal based on said portion of said optical data signal; and

- a demodulator that recovers data from said electrical signal.

Claim 17 (previously presented): Apparatus for monitoring performance of an optical communication link at an intermediate location along said link, said apparatus comprising:

- means for tapping a portion of an optical data signal traveling along said link;

- means for amplifying said portion of said optical data signal;

- means for recovering data based on said portion of said optical data signal;

- means for identifying errors in receipt of said data; and

- means for generating an indication of link operation based on a number of errors detected by said error identifying means.

Claim 18 (previously presented): The apparatus of claim 17 further comprising:

- means for isolating a particular wavelength component of said portion of said optical data signal for input to said recovering means.

Claim 19 (original): The apparatus of claim 18 wherein said isolating means comprises a tunable filter.

Claim 20 (original): The apparatus of claim 19 wherein said generating means tunes said tunable filter to test a selected wavelength component.

Claim 21 (previously presented): The apparatus of claim 17 wherein said recovering means comprises:

a photodetector circuit that generates an electrical signal based on said portion of said optical data signal; and

a demodulator that recovers data from said electrical signal.

Claim 22 (canceled).

Claim 23 (canceled).

Claim 24 (canceled).

Claim 25 (canceled).